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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/504,876	02/16/2000	Paul Hinker	06502-0210-00000	5556

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EXAMINER

TRAN, DENISE

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 09/23/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/504,876

Applicant(s)

HINKER ET AL.

Examiner

Denise Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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### DETAILED ACTION

1. Applicant's election of Group 1, claims 1-5 and 7-23 in Paper No. 11 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claim 6 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 11.
3. The applicant's amendment filed 7/8/03 has been considered. Claims 1-23 and new added claim 24 are pending in the application. Claims 1-5 and 7-24 are presented for examination.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
5. Claims 1-5 and 7-<sup>24</sup>~~23~~ are rejected under 35 U.S.C. 102(b) as being anticipated by Krusche et al., U.S. Patent No. 5,864,867, hereinafter Krusche.

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As per claims 1, 7 and 17, Krusche teaches the use of a method in a data processing system for allocating memory by a memory allocation function, comprising:

receiving a memory request for a reference to a block of memory (e.g. col. 7, lines 5-35);

returning the reference to the block of memory to satisfy the request (e.g. col. 7, lines 5-35); and

adjusting an access tree structure (i.e., removing free blocks and refilling free blocks, or splitting and smelting, or changing the tree structure based on user application) of the memory allocation function based on the memory request (e.g. col. 3, lines 30-37 and lines 58-62, col. 4, lines 9-12 and lines 39-47, col. 5, lines 42-55, col. 7, lines 1-35, figure 5 and col. 8, line 44 to col. 9, line 5, col. 9, lines 24-32 and lines 55-60, col. 11, lines 3-35, col. 14, lines 3-9, lines 14-40 and lines 53-60).

As per claims 2, 15 and 18, Krusche teaches the use of a plurality of linked-lists referring to memory blocks of a common size (e.g. col. 8, lines 45-60).

As per claims 3, 10 and 19, Krusche teaches the use of the adjusting the access tree structure, which comprises a fast access tree (e.g. figure 5, element RIT and col. 9, line 55 to col. 10, line 10), includes setting the fast access tree to refer to a first of the plurality of linked-lists (e.g. col. 9, line 55 to col. 10, line 10).

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As per claims 4, 11, 20 and 21, Krusche teaches the use of the fast access tree refers to one of the plurality of linked-lists that is most frequently requested (e.g. col. 9, line 55 to col. 10, line 10).

As per claims 5, 13 and 22, Krusche teaches the use of the adjusting the access tree structure, which comprises a general access tree (e.g. figure 5, elements RBA and LBA), includes setting the general access tree to refer to a second of the plurality of linked-lists (e.g. col. 8, lines 45-60).

As per claim 8, it is rejected for similar reasons as stated in the rejection to claim 1. Furthermore, Krusche teaches the use of a program (e.g. col. 7, lines 5-35) and a processor (e.g. abstract) and an access tree structure (e.g., fig. 5, col. 8, lines 45-50).

As per claim 9, Krusche teaches the use of a system memory function (e.g. col. 5, lines 5-42). As per the operating system, this is an inherent feature of a computer system. The operating system is core software which allows other applications to run on top of it to control resource allocation within the computer system.

As per claim 12, Krusche teaches the use of the most frequently accessed memory block size is included in the fast access tree (e.g. col. 9, line 55 to col. 10, line 10 and figure 2).

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As per claims 14 and 23, Krusche teaches the use of at least frequently accessed memory block size is included in the general access tree (e.g. figure 2 and col. 8, lines 45-60).

As per claim 16, Krusche teaches the use of each of the plurality of linked-lists has an associated counter indicating a number of times that the associated linked-list has been accessed (e.g. col. 14, lines 14-35).

As per claim 24, Krusche shows wherein receiving, returning, and adjusting are performed in a user space of the memory (e.g., col. 2, lines 45-50; col. 9, line 55- to col. 10, line 4; col. 3, lines 30-40; col. 4, lines 1-9; col. 14, lines 1-9; and col. 15, lines 5-20)

6. Applicant's remarks filed 7/8/03 have been considered but are not persuasive in view of the new citations of Krusche necessitated by Applicant's amendment.

7. In the remarks, Applicants argued in substance that Krusche fails to show the use of "adjusting an access tree structure ... based on the memory request," as recited in claim 1, because Krusche is a statically pre-performed binary tree referred to as RIT.

In response the examiner respectfully disagrees. Although Krusche discloses the RIT as a static pre-performed binary tree, Krusche's memory management system as a whole is not organized as a static pre-performed binary tree (e.g. figure 5 and col. 8, lines 44-51). The RIT is only one of three data structures within the memory

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management system. Based on Applicants claims, claims 10 and 11, the claimed "access tree structure" of claim 1 and other similar claims is not limited to only the RIT structure of Krusche. Furthermore as stated above in the rejection to claims 1, 7 and 17, Krusche shows the use of a memory management system comprising three different access structures that can be adjusted (i.e., removing free blocks and refilling free blocks, or splitting and smelting, or changing the tree structure based on user application) (e.g. col. 3, lines 30-37 and lines 58-62, col. 4, lines 9-12 and lines 39-47, col. 5, lines 42-55, col. 7, lines 1-35, figure 5 and col. 8, line 44 to col. 9, line 5, col. 9, lines 24-32 and lines 55-60, col. 11, lines 3-35, col. 14, lines 3-9, lines 14-40 and lines 53-60).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise Tran whose telephone number is (703) 305-9823. The examiner can normally be reached on Monday, Thursday and an alternated Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for central Official communications and (703) 746-7240 for Non Official communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



D.T.  
September 21, 2003